World Happiness Scores Visualized

By Valerie Andrade

Background

- Gallup is a global analytics and research firm that since 2005 has produced a "World Happiness Report" using data from a survey called the Gallup World Poll.
- The Happiness Score is a national average of responses to life evaluation questions asked in their poll combined with other factors such as GDP per capita, life expectancy, etc.
- About 150+ countries are included in each year's report.

Datasets Used

World Happiness Report datasets (5):

- Web Scraped <u>from Wikipedia</u>
 - For years 2016 2020

e 2020 report features the happiness score averaged over the years 2017–2019. Finland is the happiest country in the world, followed by Denmark, Switzerla land, and Norway. The data comes from the Gallup World Poll, based entirely on survey scores and answers to the main life evaluation question asked in the ll.								
Table								
Overall rank	Country or region	Score +	GDP per capita	Social support	Healthy life expectancy	Freedom to make life choices	Generosity +	Perceptions of corruption
1	+ Finland	7.809	1.285	1.500	0.961	0.662	0.160	0.478
2	■ Denmark	7.646	1.327	1.503	0.979	0.665	0.243	0.495
3	→ Switzerland	7.560	1.391	1.472	1.041	0.629	0.269	0.408
4	#= Iceland	7.504	1.327	1.548	1.001	0.662	0.362	0.145
5	Norway	7.488	1.424	1.495	1.008	0.670	0.288	0.434
6	Netherlands	7.449	1.339	1.464	0.976	0.614	0.336	0.369
7	Sweden	7.353	1.322	1.433	0.986	0.650	0.273	0.442
8	New Zealand	7.300	1.242	1.487	1.008	0.647	0.326	0.461
9	Austria	7.294	1.317	1.437	1.001	0.603	0.256	0.281
10	Luxembourg	7.238	1.537	1.388	0.986	0.610	0.196	0.367
11	I◆I Canada	7.232	1.302	1.435	1.023	0.644	0.282	0.352

GeoJSON of all countries (1):

Includes multi-polygon
 coordinates for all countries

```
| **Type** **Testure**, "respecties** ( **MEN**, **Testure**, 150.A***, **Testure**, 1 ( **Type**, "respecties** ( **MEN**, **Testure**, 150.A***, **Testure**, 1 ( **Type**, "respecties** ( **MEN**, **Testure**, 150.A***, 150.
```

Data Visualization Concept

- Concept is to create a world map that uses a Choropleth layer that pulls in data from the Mongo database to update the map accordingly.
- A dropdown is needed to select different years in the dropdown that will correspond to the correct Flask endpoint to pull the data from.
- Addition of two bar charts underneath the map that also pulls in data from Mongo database. These charts are meant to provide quick visualizations of the highest scoring countries and lowest scoring countries.

Process

- Web Scraping for World Happiness Report datasets
- ETL for all 6 datasets including geojson file and load them in MongoDB database
- Build Flask-powered API app using Flask-PyMongo
- Build Javascript files:
 - Main map built using Leaflet and Mapbox
 - Bar charts built using Plotly

Link to Web Application

Gallup's World Happiness Report